

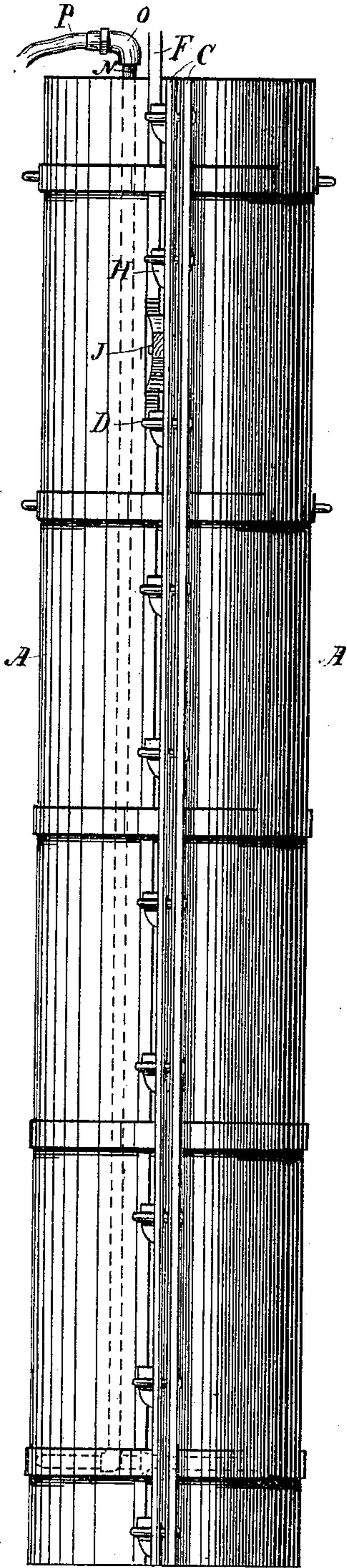
(No Model.)

J. DOLBEER.

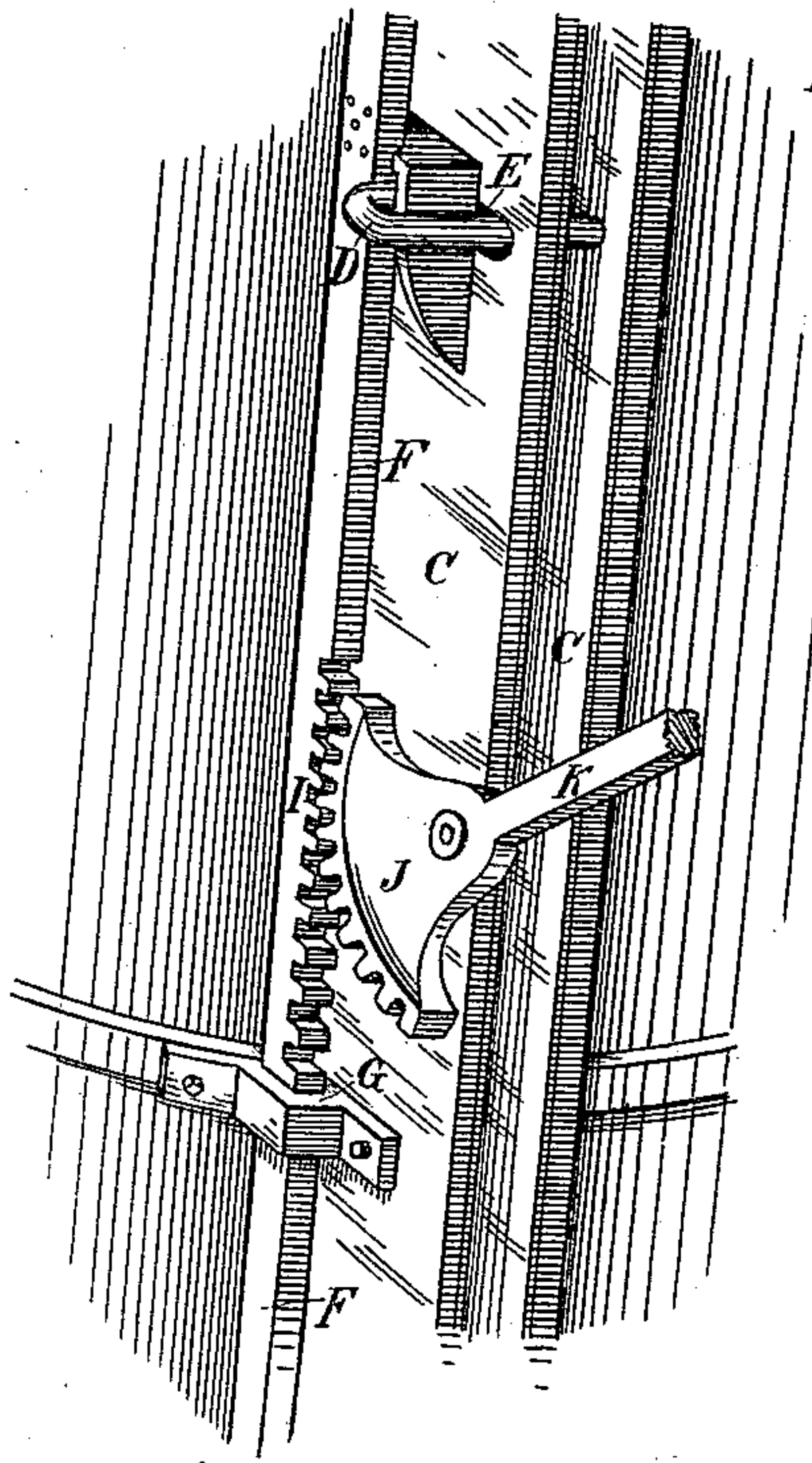
APPARATUS FOR STEAMING PILES.

No. 333,204.

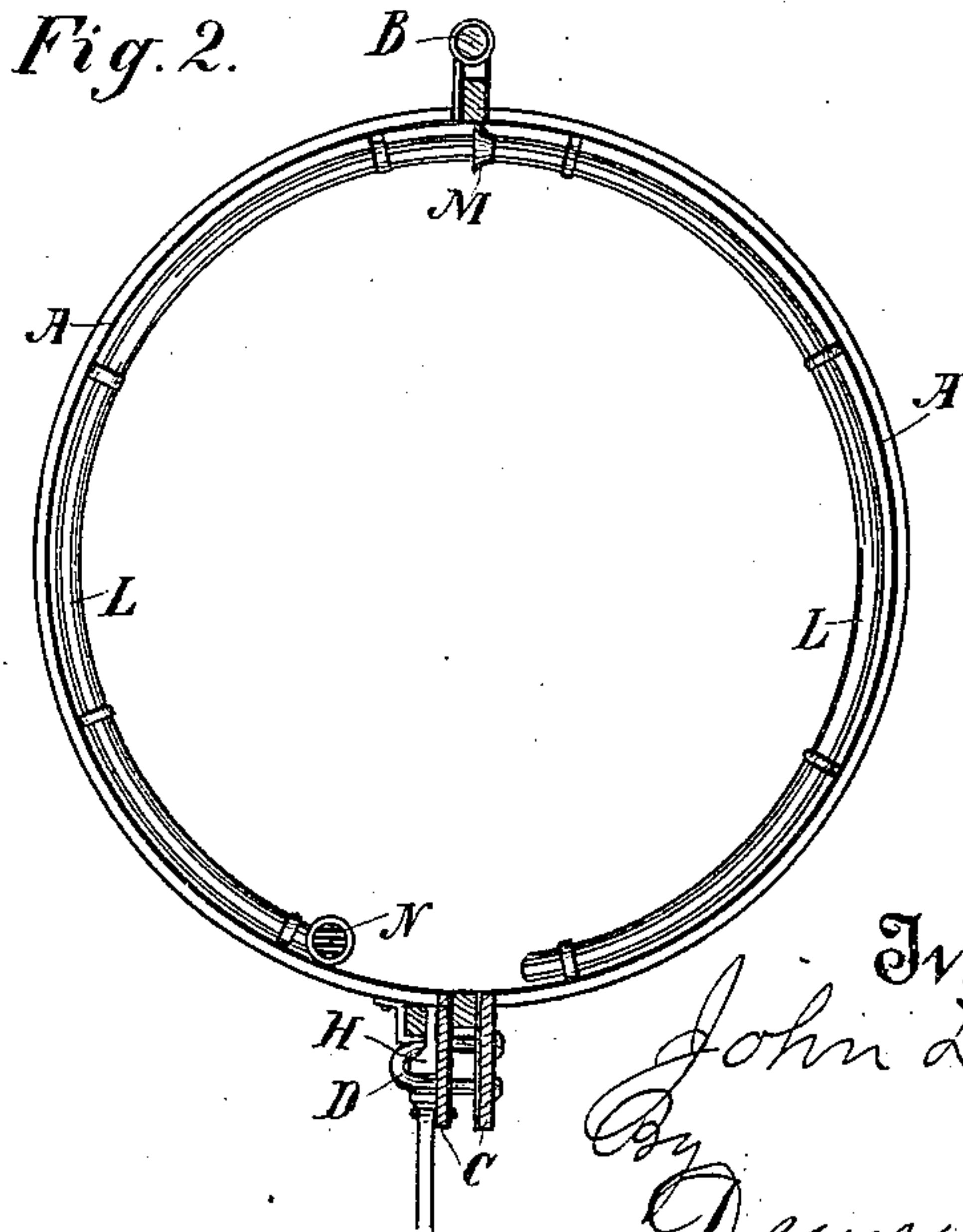
Patented Dec. 29, 1885.



*Fig. 1.*



*Fig. 3.*



*Fig. 2.*

Witnesses,  
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# UNITED STATES PATENT OFFICE.

JOHN DOLBEER, OF SAN FRANCISCO, CALIFORNIA.

## APPARATUS FOR STEAMING PILES.

SPECIFICATION forming part of Letters Patent No. 333,204, dated December 29, 1885.

Application filed September 24, 1885. Serial No. 178,101. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN DOLBEER, of the city and county of San Francisco, State of California, have invented an Improvement in Apparatus for Treating Wooden Piles; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus for treating wooden piles after they have been driven and where they are partially submerged and exposed to the attack of marine insects or worms.

It consists of an inclosing-case made separable, so that it may be applied to a pile in position and closed around it, and a means for injecting into the interior space thus inclosed steam or any other substance.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an exterior view of an apparatus suitable for the purpose. Fig. 2 is a transverse section of the same, showing the manner of hinging and securing the parts. Fig. 3 is an enlarged view showing a means for locking and unlocking the hinging portions.

In many sea-ports certain marine insects, notably the teredo, are very destructive to wooden piles which have been driven into the water, and by incessant boring they soon honeycomb the wood, so that it is entirely destroyed, and the piles must be replaced by new ones.

In my invention I inclose the pile with a cylindrical casing, which in the present case I have shown formed of two halves, A A, hinged together longitudinally along one side, as shown at B, and having flanges C along the opposite side where the two parts of the cylinder separate. One of these flanges is provided with staples D, which project through corresponding slots, E. A bar or rod, F, is fitted to slide in suitable guides, G, upon one side of the perforated flange C, and this bar carries wedge-shaped keys H, which project to one side and in line with the openings in the staples, so that when the bar is moved in one direction these keys are all forced through their respective staples, drawing the flanges C together and closing the two parts of the cylinder from end to end, locking them firmly together and moving the bar F through its

guides G in an opposite direction. The keys will all be simultaneously withdrawn, and the parts are left free to be opened again. Various means may be employed for operating this bar; but in the present case I have shown it formed with a rack or teeth at I, which will engage with the teeth of a segment, J, suitably journaled to one of the flanges C. This segment has a lever-arm, K, extending rearwardly from it, and by operating this lever the segment will cause the rack and the bar F to move up or down, as may be desired. The cylinder A is made of sufficient length to reach from the surface of the water down to the bottom or mud into which the pile is driven, and when it has been placed around the pile and closed it rests upon the mud, thus forming a comparatively tight bottom, and inclosing a small body of water within it and surrounding the pile. Rubber or other packing may be employed at the hinge and opposite joints, if necessary or desirable. Near the bottom of this cylinder A is fixed a pipe, L, which is also made of two parts, forming semicircles, as shown in Fig. 2. One of these parts may have the ends near the hinge B made funnel-shaped, as shown at M, so that the other part can readily slip into it or separate from it when the cylinder is closed or opened. The opposite end of one of these parts is closed, while the other end connects with a vertical pipe, N, which extends upward along the side of the cylinder to the top, where it is connected by an elbow, O, or other coupling with a section of flexible hose, P, of sufficient length to reach a boiler from which the steam is to be drawn. Holes or perforations are made all around the interior of the pipe L, and it will be manifest that as soon as steam is admitted through the pipe N it passes around from pipe L, rushing out through the jet-holes and heating the water which is inclosed within the tube around the pile to a high temperature, the heat depending upon the amount of steam which is admitted. This process is carried on long enough to destroy all animal life within the pile, when the tube may be unclaspd and removed to another and the treatment be repeated. In some cases it may be found desirable to introduce an impregnated substance which will be sufficiently powerful to destroy



animal life; but I have found that the high temperature applied in the manner herein described is usually sufficient for the purpose.

The apparatus may be provided with exterior rings or attachments for convenience in handling.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

10 1. A device for destroying animal life or insects in wooden structures, consisting of an inclosure formed of two semi-cylinders hinged together at one edge and surrounding the pile or structure, and pipes for introducing a current of steam or other destructive material  
15 into the inclosure and between the sides of the same and the pile or structure to be treated, substantially as herein described.

20 2. An inclosure for piles or wooden structures which are permanently fixed beneath the water, consisting of a chamber formed of semi-

cylinders hinged together at one edge with keys or wedges for closing and locking the opposite edges together, in combination with a sectional pipe surrounding the lower portion  
25 of the chamber and connected by a longitudinal pipe at one side with a steam-generator, substantially as herein described.

3. The means for locking the semi-cylinders together, consisting of staples fixed to one of  
30 the flanges and projecting through slots in the other, in combination with a sliding bar having wedge-shaped keys attached to it, so as to be introduced to or removed from the staples, and gearing by which the bar may be recip-  
35 roated, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN DOLBEE.

Witnesses:

S. H. NOURSE,  
H. C. LEE.